

**The Spiders of Staveley Nature Reserve,  
near Knaresborough, North Yorkshire (vice-county 64)**

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### Introduction

Staveley is a nature reserve managed by the Yorkshire Wildlife Trust though not designated as a Site of Special Scientific Interest. It is located approximately 5 km north of Knaresborough, North Yorkshire (vice-county (VC) 64: mid-west Yorkshire), centred on national grid reference SE 365 634. The dominant habitats present on site form a mosaic of woodland, grassland, scrub and wetland environments, occupying approximately 40 ha.

The Reserve is located within a rural environment, largely surrounded by agricultural land though the southern edge more-or-less abuts the edge of Staveley village. The lagoons are the result of the sand, gravel and clay extraction industry, completed in the 1970s. Following a partial backfill and levelling of the site, the mosaic of dry and wet terrestrial habitats developed, leading to botanically rich grasslands supporting a number of important species. The fauna is relatively well documented, though this has largely focussed on the mammals, birds and more popular invertebrate groups such as butterflies, damselflies and dragonflies.

The national Spider Recording Scheme database for VC 64 holds no previous records for Staveley, or the tetrad SE 36R within which the Reserve resides. The 2010 survey will provide a base-line for the Reserve, which can inform any future survey.

### Methodology

Fieldwork focussed on locations within the Reserve where the terrestrial habitats were considered to be of primary nature conservation value, namely the fen meadow (wet grassland), scrub and woodland (see Table 1). A variety of different collecting methods were employed, mainly using pitfall traps but also sweep-netting and beating vegetation.

**Table 1:** Locations of pitfall traps (in 2010), with comments on habitats studied at Staveley.

Location	Grid Reference	Tetrad	Habitat
Fen Meadow	SE 3643 6361	SE 36R	A floristically diverse wetland community situated on the edge of open water, emergent vegetation fringed by rushes, sedges and common reed ( <i>Phragmites communis</i> ) fen on one side, and hawthorn ( <i>Crataegus monogyna</i> ) scrub on the other.  Four pitfall traps were located in a transect from the edge of the taller rush dominated vegetation towards the centre of the fen

Location	Grid Reference	Tetrad	Habitat
			meadow. To minimise/ avoid capturing amphibians, a narrow gauge (5 mm) wire mesh was pegged down over each of the pitfall traps.
Woodland	SE 3667 6322	SE 36R	An ash ( <i>Fraxinus excelsior</i> ) dominated deciduous woodland with some crack willow ( <i>Salix fragilis</i> ). Ground flora sparse but where present, Indian balsam ( <i>Impatiens glandulifera</i> ) is locally abundant.  Four pitfall traps were located in a transect within the northern sector of this woodland block amongst leaf-litter and dead wood with a sparse ground-flora.

Whilst the focus was on pitfall trapping, collecting by other methods such as sweeping vegetation and beating the low branches of scrub/ trees was also undertaken. These were undertaken at locations within a few tens of metres from the pitfall traps.

To maximise the potential to collect different spider species, and reduce the total material collected during the season, surveys were limited to three separate periods covering the spring, summer and autumn (see Table 2 for details).

**Table 2:** Periods of Survey

Season	Dates
Spring	13 <sup>th</sup> March – 24 <sup>th</sup> April 2010
Summer	23 <sup>rd</sup> May – 1 <sup>st</sup> July 2010
Autumn	21 <sup>st</sup> September – 24 <sup>th</sup> October 2010

### Aims

Given that there are no previous spider records associated with the Reserve, and a limited number of species recorded within the 10 km grid square SE 36, the principle aim was to complete a baseline survey for the Reserve and the Yorkshire Wildlife Trust. The intensive nature of the survey (11 visits over 8 months) would likely identify new species for SE 36 and thus increase our knowledge of the spider fauna within the hectad.

### Results

A total of 57 species of spider were recorded on the Reserve in 2010 by all methods. The survey added an additional two species to VC 64 (the money-spider *Tapinocyba praecox* and the scarce dictynid (mesh-web weaver) *Cicurina cicur*). A further 31 species were added to the SE 36 hectad,

which now stands at 108 species. Appendix 1 lists all the species recorded and their distribution within the Reserve.

The 57 species captured reflects a reasonably thorough survey effort employed during 2010. However, it should be noted that significant reliance was placed on the use of pitfall traps, with a limited amount of time spent on more active survey methods such as beating vegetation, sweeping the field layer or grubbing at the base of tussocks or in leaf-litter. Additional species are therefore likely to be present, especially representatives from families not typically captured by pitfall traps (e.g. crab spiders (Thomisidae and Philodromidae), big-jawed spiders (Tetragnathidae) and comb-footed spiders (Theridiidae)).

Of the 57 species recorded, the two new species for VC 64 are described in more detail below. The remaining 31 species that were recorded for the first time in SE 36 are generally widespread in Yorkshire and reflect the lack of recording in the hectad.

**Table 3:** Uncommon species recorded at Staveley (2010) (see Appendix 2 for distribution maps)

Family	Species	Comments
Linyphiidae	<i>Tapinocyba praecox</i>	This is a widespread species in Yorkshire and the lack of records in VC 64 merely reflects the survey effort in the vice-county in recent times. Smith (1982) considered it to be a frequent species. Nationally, this has a patchy distribution, absent from the west (Harvey, Nellist and Telfer, 2002). It is an autumn and winter active species, which may partially explain the lack of records for VC 64 until now.
Dictynidae	<i>Cicurina cicur</i>	Smith (1982) considered this an extremely rare spider with less than five recent records, four in the East Riding (near Hull). In the intervening 30 years, whilst a further 23 records have been made, including the Staveley record, it remains a scarce species in Yorkshire. The same can be said outside the south-east of England, nationally (Harvey, Nellist and Telfer, 2002).  More than two-thirds of the Yorkshire records are associated with the eastern vice-counties, where there appears to be an affinity with calcareous strata. The underlying geology at Staveley is also calcareous (Late Permian Dolomitic Limestone, British Geological Society). The spider is generally recorded in dark and damp places; the woodland leaf-litter conforming to the habitat that it could be expected to occur.

This study focussed on two locations, the woodland at the southern end of the Reserve (close to the 'entrance') and the fen meadow community towards the centre of the site. Other extensive habitats present such as the grazing marsh (fenced off area to the east of the woodland) centred on SE 367 632; or the species-poor, tussocky grassland to the north of the Reserve (adjacent to the River Tutt), centred on SE 365 638 were not studied. These habitats are likely to support relatively common species recorded elsewhere so effort was spent in the more structurally varied communities.

#### Habitat Management Recommendations

The Reserve is managed primarily for its bird and botanical interest. The fen meadow grassland is managed by an annual cut in late summer to maintain its floristic diversity. Cut material is removed from site and stacked as habitat piles under areas of dense scrub. Such habitat management should be maintained and no further comment can usefully be made.

Within the woodland, effort should be made to eradicate/ control the Indian balsam before it spreads beyond the Reserve's boundary or along the watercourses and waterbodies that are present elsewhere. A continual supply of dead wood and leaf-litter should ensure the continued presence of *Cicurina cicur* as well as other invertebrates.

#### Further Survey

Further survey would be beneficial in specific habitats within the Reserve and with a focus on alternative collecting methods. Hand searching (grubbing) at the base of vegetation and in leaf-litter accumulations at the interface between the reedbeds fringing the drier (but still 'wet') grassland and fen habitats may yield additional species. Beating vegetation within the scrub fringes and woodland edge habitats will also likely provide additional species, especially in families under-represented in this years' survey.

#### References

- Harvey, P.R., Nellist, D.R. and Telfer, M.G. (2002) *Provisional Atlas of British spiders (Arachnida, Araneae), Volumes 1 and 2*. Biological Record Centre: Huntingdon. 406pp
- Smith, C.J. (1982) *An Atlas of Yorkshire Spiders*. Privately published. 134pp

## Appendix 1: Spiders recorded at Staveley in 2010

Family	Species	Status	Fen Meadow	Woodland & Scrub
Theridiidae	<i>Paidiscura pallens</i> (Blackwall, 1834)	*		X
	<i>Enoplognatha ovata sens. str.</i> (Clerck, 1757)		X	
Linyphiidae	<i>Ceratinella brevipes</i> (Westring, 1851)	*	X	
	<i>Walckenaeria antica</i> (Wider, 1834)	*	X	
	<i>Walckenaeria vigilax</i> (Blackwall, 1853)		X	
	<i>Dicymbium nigrum</i> (Blackwall, 1834)	*	X	X
	<i>Hylyphantes graminicola</i> (Sundevall, 1830)	*		X
	<i>Dismodicus bifrons</i> (Blackwall, 1841)		X	
	<i>Hypomma bituberculatum</i> (Wider, 1834)		X	
	<i>Baryphyma trifrons</i> (O.P.-Cambridge, 1863)		X	
	<i>Maso sundevalli</i> (Westring, 1851)	*		X
	<i>Pocadicnemis juncea</i> Locket & Millidge, 1953	*	X	
	<i>Oedothorax gibbosus</i> (Blackwall, 1841)		X	
	<i>Oedothorax gibbosus f. tuberosus</i> (Blackwall, 1841)		X	
	<i>Oedothorax retusus</i> (Westring, 1851)		X	
	<i>Silometopus elegans</i> (O.P.-Cambridge, 1872)	*	X	
	<i>Tapinocyba praecox</i> (O.P.-Cambridge, 1873)	†	X	
	<i>Monocephalus fuscipes</i> (Blackwall, 1836)			X
	<i>Lophomma punctatum</i> (Blackwall, 1841)	*	X	
	<i>Erigonella hiemalis</i> (Blackwall, 1841)	*	X	X
	<i>Savignia frontata</i> Blackwall, 1833	*	X	
	<i>Diplocephalus permixtus</i> (O.P.-Cambridge, 1871)	*	X	
	<i>Diplocephalus latifrons</i> (O.P.-Cambridge, 1863)	*		X
	<i>Diplocephalus picinus</i> (Blackwall, 1841)	*		X
	<i>Erigone dentipalpis</i> (Wider, 1834)	*	X	X
	<i>Erigone atra</i> Blackwall, 1833		X	X
	<i>Meioneta saxatilis sens. str.</i> (Blackwall, 1844)	*	X	
	<i>Microneta viaria</i> (Blackwall, 1841)			X
	<i>Centromerus sylvaticus</i> (Blackwall, 1841)	*		X
	<i>Centromerita bicolor</i> (Blackwall, 1833)	*	X	X
	<i>Bathyphantes gracilis</i> (Blackwall, 1841)		X	
	<i>Kaestneria dorsalis</i> (Wider, 1834)	*		X
	<i>Diplostyla concolor</i> (Wider, 1834)			X
	<i>Lepthyphantes tenuis</i> (Blackwall, 1852)		X	X
	<i>Lepthyphantes mengei</i> Kulczynski, 1887	*		X
	<i>Lepthyphantes flavipes</i> (Blackwall, 1854)	*		X
	<i>Lepthyphantes tenebricola</i> (Wider, 1834)	*		X
	<i>Neriere clathrata</i> (Sundevall, 1830)			X
	<i>Neriere peltata</i> (Wider, 1834)			X
Tetragnathidae	<i>Tetragnatha extensa</i> (Linnaeus, 1785)		X	
	<i>Pachygnatha clercki</i> Sundevall, 1823		X	X

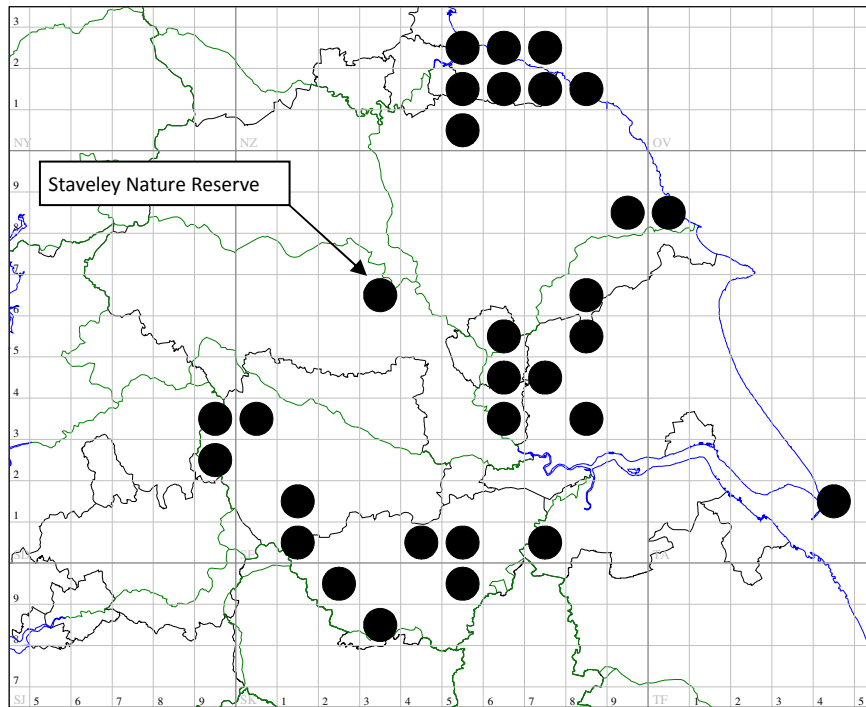
Family	Species	Status	Fen Meadow	Woodland & Scrub
	<i>Pachygnatha degeeri</i> Sundevall, 1830		X	
Araneidae	<i>Larinioides cornutus</i> (Clerck, 1757)			X
Lycosidae	<i>Pardosa pullata</i> (Clerck, 1757)		X	X
	<i>Pardosa amentata</i> (Clerck, 1757)		X	X
	<i>Alopecosa pulverulenta</i> (Clerck, 1757)	*	X	
	<i>Trochosa ruricola</i> (De Geer, 1778)	*	X	X
	<i>Trochosa terricola</i> Thorell, 1856		X	
	<i>Pirata piraticus</i> (Clerck, 1757)	*	X	X
Hahnidae	<i>Antistea elegans</i> (Blackwall, 1841)	*	X	X
Dictynidae	<i>Dictyna arundinacea</i> (Linnaeus, 1758)		X	
	<i>Cicurina cicur</i> (Fabricius, 1793)	†		X
Clubionidae	<i>Clubiona reclusa</i> O.P.-Cambridge, 1863		X	
	<i>Clubiona stagnatilis</i> Kulczynski, 1897		X	
Zoridae	<i>Zora spinimana</i> (Sundevall, 1833)		X	
Thomisidae	<i>Tibellus oblongus</i> (Walckenaer, 1802)	*	X	
	<i>Xysticus cristatus</i> (Clerck, 1757)		X	
	<i>Xysticus ulmi</i> (Hahn, 1831)	*	X	
<b>Total</b>	<b>57</b>		<b>41</b>	<b>26</b>

† New species for VC 64; \* New species for SE 36

**Appendix 2: Distribution Maps**

**Figure A2.1: Distribution of *Tapinocyba praecox* in Watsonian Yorkshire (10 km)**

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**Figure A2.2: Distribution of *Cicurina cicur* in Watsonian Yorkshire (10 km).** © British Arachnological Society

